

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously Presented): A catalyst for selective hydrodesulfurization of hydrocarbon feedstocks that comprise sulfur-containing compounds and olefins, said catalyst comprising a substrate that is selected from among the refractory oxides having a specific surface of less than 150 m²/g, at least one metal that is selected from the group that consists of the metals of groups VI and VIII of the periodic table and carbon, characterized in that the carbon content is between 0.5 and 2.6% by weight and in that the catalyst is in a sulfide form.

Claim 2 (Canceled)

Claim 3 (Currently Amended): A catalyst according to ~~claim 2~~ claim 1, wherein the overall sulfur content in said catalyst is between 60 and 140% of the sulfur content that is necessary for the total sulfurization of all of the metals of said catalyst belonging to groups VI and VIII.

Claim 4 (Previously Presented): A catalyst according to claim 1, wherein the specific surface area of the substrate of not more than 130 m²/g.

Claim 5 (Previously Presented): A catalyst according to claim 1, wherein the metal of group VI is selected from the group that consists of molybdenum and tungsten, and the metal of group VIII is selected from the group that consists of nickel and cobalt.

Claim 6 (Previously Presented): A method for the production of a catalyst according to claim 1 for selective hydrodesulfurization of hydrocarbon-containing feedstocks that

comprise sulfur-containing compounds and olefins, said method comprising:

- a stage for impregnation of metals of groups VI and/or VIII on a substrate,
- an activation stage that is a sulfurization stage that is carried out by contact with a gas that comprises hydrogen and hydrogen sulfide, and
- a stage for deposition of carbon by contact with at least one hydrocarbon-containing compound, so as to deposit an amount of carbon that is between 0.5 and 2.6% by weight relative to the mass of catalyst.

Claim 7 (Previously Presented): A method according to claim 6, wherein the stage for deposition of carbon is carried out during the activation stage.

Claim 8 (Previously Presented): A method according to claim 6, wherein the stage for deposition of carbon is carried out at the same time as the impregnation of metals of groups VI and/or VIII by depositing a precursor that contains carbon at the time of impregnation of the metals of groups VI and/or VIII.

Claim 9 (Previously Presented): A process for the selective hydrodesulfurization of feedstocks that comprise sulfur-containing compounds and olefins, wherein said process comprises using the catalyst according to claim 1.

Claim 10 (Previously Presented): A process according to claim 9, wherein the feedstock comprises a gasoline fraction that is obtained from a catalytic cracking unit containing hydrocarbons with 5 carbon atoms to compounds that have a boiling point of approximately 250°C.

Claim 11 (Previously Presented): A catalyst according to claim 1, comprising cobalt and molybdenum.

Claim 12 (Previously Presented): A catalyst according to claim 1, comprising nickel oxide supported in alumina.

Claim 13 (Previously Presented): A catalyst according to claim 1, having a carbon content of 1 to 2.6% by weight.

Claim 14 (Previously Presented): A catalyst according to claim 11, having a carbon content of 1 to 2.6% by weight.